The invention in which an exclusive right is claimed is defined by the following:

1. A fluid delivery system for infusing a medicinal fluid supplied from a reservoir into a patient at a desired rate, comprising:

(a) a fluid line through which the medicinal fluid is conveyed from the reservoir to a patient;

(b) a flow controller that selectively varies a rate of flow of the medicinal fluid through the fluid line;

(c) a processor that is controllably coupled to the flow controller, said processor operating the flow controller so as to vary a rate at which the medicinal fluid flows through the fluid line; and

(d) a flow sensor that monitors a rate of flow of the medicinal fluid through the fluid line, producing an output signal indicative thereof, said output signal being coupled to the processor, said processor controlling the flow controller in a closed-loop process as a function of the signal, to achieve the desired rate of infusion of the medicinal fluid into a patient.

2. The fluid delivery system of Claim 1, wherein the flow sensor comprises:

(a) an orifice disposed in a fluid path through which the medicinal fluid flows in the fluid line, said orifice having a cross-sectional size that is substantially less than that of the fluid line; and

(b) a pressure-sensing module configured to sense a pressure drop across the orifice, said pressure sensor producing the signal in response thereto.

3. The fluid delivery system of Claim 2, wherein the pressure sensing module comprises a distal pressure sensor and a proximal pressure sensor, said distal pressure sensor monitoring a distal pressure of the medicinal fluid, downstream of the orifice, and said proximal pressure sensor monitoring a proximal pressure of the medicinal fluid, upstream of the orifice, a difference between the distal pressure and the proximal pressure determining the signal supplied to the processor, which is indicative of the rate of flow of medicinal fluid through the fluid line.

4. The fluid delivery system of Claim 2, wherein the pressure sensing module comprises a differential pressure sensor that monitors a differential pressure across the orifice and in response thereto, produces the signal supplied to the processor, which is indicative of the rate of flow of medicinal fluid through the fluid line.

5. The fluid delivery system of Claim 1, wherein the flow sensor is disposed in a Y fitting in the fluid line, said Y fitting being coupled to the processor.

6. The fluid delivery system of Claim 1, wherein the flow sensor is disposable and is connected to the fluid line.

7. The fluid delivery system of Claim 6, wherein the flow sensor is removably coupled to the processor through a connector.

8. The fluid delivery system of Claim 6, wherein the flow sensor is removably coupled to the processor through a signal probe having a indexing structure to align a first set of contacts on the signal probe with a second set of contacts that are electrically coupled to the flow sensor.

9. The fluid delivery system of Claim 1, wherein the flow sensor is disposed within a fitting in the fluid line, further comprising a bypass channel within the fitting, generally in parallel with the orifice, said bypass channel being selectively opened to enable the medicinal fluid to substantially bypass the orifice when a substantially greater rate of flow of the medicinal fluid than the desired rate is required through the fluid line.

10. The fluid delivery system of Claim 1, wherein the flow controller comprises a pump that forces the medicinal fluid through the fluid line to infuse the medicinal fluid into a patient.

11. The fluid delivery system of Claim 1, further comprising a user interface that enables input by a user of the desired rate of medicinal fluid flow through the fluid line.

12. A flow control for controlling a fluid flow through a fluid line to achieve a desired rate of infusion of a medicinal fluid into a patient, comprising:

(a) a flow sensor adapted to be disposed in a fluid path of a medicinal fluid flowing through a fluid line, said flow sensor producing a signal indicative of a rate of flow of a medicinal fluid through the fluid path;

(b) a flow regulator adapted to be disposed within the fluid path for use in varying a rate of flow of a medicinal fluid through the fluid path; and

(c) a processor coupled to the flow sensor to receive the signal produced thereby, said processor being coupled to the flow regulator to control the rate of flow of a medicinal fluid through the flow regulator in response to the signal to achieve the desired rate of infusion.

13. The flow control of Claim 12, wherein the flow sensing module includes:

(a) an orifice disposed in the fluid path, said orifice having a cross-sectional size that is substantially less than that of the fluid path, both proximal and distal to the orifice; and

(b) a pressure-sensing module configured to sense a pressure drop across the orifice, said pressure sensor producing the signal in response thereto.

14. The flow control of Claim 13, wherein the pressure sensing module comprises a distal pressure sensor and a proximal pressure sensor, said distal pressure sensor monitoring a distal pressure downstream of the orifice, and said proximal pressure sensor monitoring a proximal pressure upstream of the orifice, a difference between the distal pressure and the proximal pressure determining the signal supplied to the processor, which is indicative of the rate of flow through the fluid path.

15. The flow control of Claim 13, wherein the pressure sensing module comprises a differential pressure sensor that monitors a differential pressure across the orifice and in response thereto, produces the signal supplied to the processor, which is indicative of the rate of flow of medicinal fluid through the fluid line.

16. The flow control of Claim 12, wherein the flow regulator comprises a pump that is operatively controlled by the processor to vary a rate of the medicinal fluid flow through the fluid path.

17. The flow control of Claim 12, wherein the flow regulator comprises an electrically controlled valve that is operatively controlled by the processor to vary a rate of the medicinal fluid flow through the fluid path.

18. The flow control of Claim 12, wherein the flow sensor is disposed in a Y fitting in the fluid line, said Y fitting being coupled to the processor.

19. The flow control of Claim 12, wherein the flow sensor is disposable and is coupled into the fluid path.

20. The flow control of Claim 19, wherein the flow sensor is removably coupled to the processor through a connector.

21. The flow control of Claim 19, wherein the flow sensor is coupled to the processor through a removable probe having electrical contacts.

22. The flow control of Claim 12, wherein the flow sensor is disposed within a fitting, further comprising a bypass channel within the fitting, generally in parallel flow relationship with the orifice, said bypass channel being selectively opened to enable the medicinal fluid to substantially bypass the orifice when a substantially greater rate of flow of the medicinal fluid than the desired rate is required.

23. The flow control of Claim 12, further comprising a user interface that enables input by a user of the desired rate of medicinal fluid flow through the fluid path.

24. A method for controlling a rate of infusion of a medicinal fluid into a patient through a fluid path, comprising the steps of:

(a) providing a flow sensor in the fluid path, said flow sensor producing a signal indicative of a rate of flow of a medicinal fluid through fluid path;

(b) sensing the rate of flow of the medicinal fluid with the flow sensor to produce the signal;

(c) providing an electrically controlled flow regulating device in the fluid path; and

(d) automatically controlling the flow regulating device in response to the signal produced by the flow sensor to achieve a desired rate of flow of the medicinal fluid into a patient through the fluid path.

25. The method of Claim 24, wherein the step of providing an electrically controlled flow regulating device comprises the step of providing an electrically energized pump.

26. The method of Claim 24, wherein the step of providing an electrically controlled flow regulating device comprises the step of providing an electrically controlled valve.

27. The method of Claim 24, wherein the step of providing a flow sensor comprises the step of providing a Y site in a fluid line through which the medicinal fluid flows and in which a flow sensing module is included.

28. The method of Claim 27, further comprising the step of providing a bypass within the Y site, said bypass being selectively operable by a user to enable the medicinal fluid to substantially bypass the flow sensing module if a substantially greater rate of flow of the medicinal fluid through the Y site than the desired rate is required.

29. The method of Claim 27, further comprising the step of coupling the flow-sensing module to a user interface that includes a processor used for automatically controlling the flow-regulating device.

30. The method of Claim 29, further comprising the step of providing an indexing structure to align electrical contacts and to facilitate the step of coupling.

31. The method of Claim 24, wherein the step of sensing the rate of flow comprises the step of sensing a distal pressure and a proximal pressure on a distal side and on a proximal side of an orifice through which the medicinal fluid flows in the fluid path.

32. The method of Claim 24, wherein the step of sensing the rate of flow comprises the step of sensing a differential pressure between a distal side and a proximal side of an orifice through which the medicinal fluid flows in the fluid path.